CITY OF DRIGGS (PWS 7410004)
SOURCE WATER ASSESSMENT FINAL REPORT

July 31, 2001

State of Idaho
Department of Environmental Quality

Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the act. This assessment is based on a land use inventory of the designated assessment area, sensitivity factors associated with the wells, and aquifer characteristics.

This report, *Source Water Assessment for the City of Driggs*, describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The City of Driggs public water system (PWS #7410004) consists of one main source (Teton Creek Spring infiltration gallery), three back-up source wells (Dalley Well, High School well, Lion's Park well), and the storage tank well. In July 1996, total coliform bacteria and *E-coli* bacteria were detected in water samples taken from the "waterline" for the City of Driggs' water supply. From December 1994 to December 2000, nitrate concentrations were below 2.0 milligrams per liter (mg/l) in all the sources. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/l. The High School Well has had detections of the inorganic contaminants (IOCs) chromium and fluoride, but at levels well below the MCL. No volatile organic contaminants (VOCs) or synthetic organic contaminants (SOCs) were detected in any of the sources.

In terms of total susceptibility, the Teton Creek Spring infiltration gallery ranks *low* for all types of contaminants (IOCs, VOCs, SOCs, and microbials), this is thanks to the few potential contaminant sources in the watershed and the proper construction of the intake facility.

Each of the delineations for the four city wells are different, leading to variances in the potential contaminant sources and overall final susceptibility rankings. As such, variations in agricultural land uses, location of potential contaminant sources, hydraulic sensitivity, and the differing well constructions, result in varying susceptibilities for the different contaminant types identified for each well. In terms of total susceptibility, Well #1 – Tank and Well #2 – Dalley water rank *high* on all categories. The High School Well ranks *high* for IOCs and *moderate* for all other potential contaminants. By protecting the High School Well from surface flooding as detailed in the 2000 Sanitary Survey, the susceptibility for IOCs would be consequently reduced to moderate susceptibility. The Lion's Well ranks *moderate* for all categories, despite having multiple potential contaminant sources because the well is in substantial compliance with the wellhead and surface seal regulations, the well is protected from surface flooding, and has a moderate hydrologic sensitivity.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For the City of Driggs, source water protection activities should first focus on correcting any deficiencies outlined in the Sanitary Survey. Since total coliform bacteria were detected in the distribution system, the City of Driggs should maintain their disinfection program, which could be used to treat this problem. Any spills from the potential contaminant sources listed in Tables 1 through 5 should be carefully monitored, as should any future development or resource extraction in the Teton Spring Creek watershed. Other practices aimed at reducing the leaching of agricultural type chemicals from farmland within the delineated source water areas should be implemented. The City of Driggs may want to consider making a well other than Well #1 – Tank-- the primary back-up well. The Lion's Park Well seems to offer the most protection against potential contaminants and may be the best choice for primary back-up status. Most of the designated areas are outside the direct jurisdiction of the City of Driggs and would not be impacted by municipal ordinances, making partnerships with state and local agencies and industry groups critical to success. Since the main source of water comes from a Wyoming watershed, the City of Driggs should consider adding representatives from Wyoming to any groups formed. Due to the time involved with the movement of ground water, source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. Source water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil Conservation District, and the Natural Resources Conservation Service.

A community with a fully developed source water protection program will incorporate many strategies. For assistance in developing protection strategies please contact the Idaho Falls Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR THE CITY OF DRIGGS, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are attached. The list of significant potential contaminant source categories and their rankings, used to develop this assessment, is also attached.

Level of Accuracy and Purpose of the Assessment

The Idaho Department of Environmental Quality (DEQ) is required by the U.S. Environmental Protection Agency (EPA) to assess the over 2,900 public drinking water sources in Idaho for their relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area, sensitivity factors associated with the wells, and aquifer characteristics. All assessments must be completed by May of 2003. The resources and time available to accomplish assessments are limited. Therefore, an in-depth, site-specific investigation to identify each significant potential source of contamination for every public water system is not possible. **This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of this assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (DEQ) recognizes that pollution prevention activities generally require less time and money to implement than treating a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Wellhead or source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The City of Driggs public drinking water system consists of one main source (Teton Creek Spring infiltration gallery), three back-up source wells (Dalley Well, High School Well, Lion's Park Well), and the storage tank well. The system serves approximately 900 people with 500 connections, and is located in Teton County, 1.5 miles west of the Idaho-Wyoming border between Tetonia and Victor (Figure 1).

The primary water quality issues currently facing the City of Driggs are total coliform bacteria contamination in the distribution system and potential nitrate contamination.

Defining the Zones of Contribution – Delineation

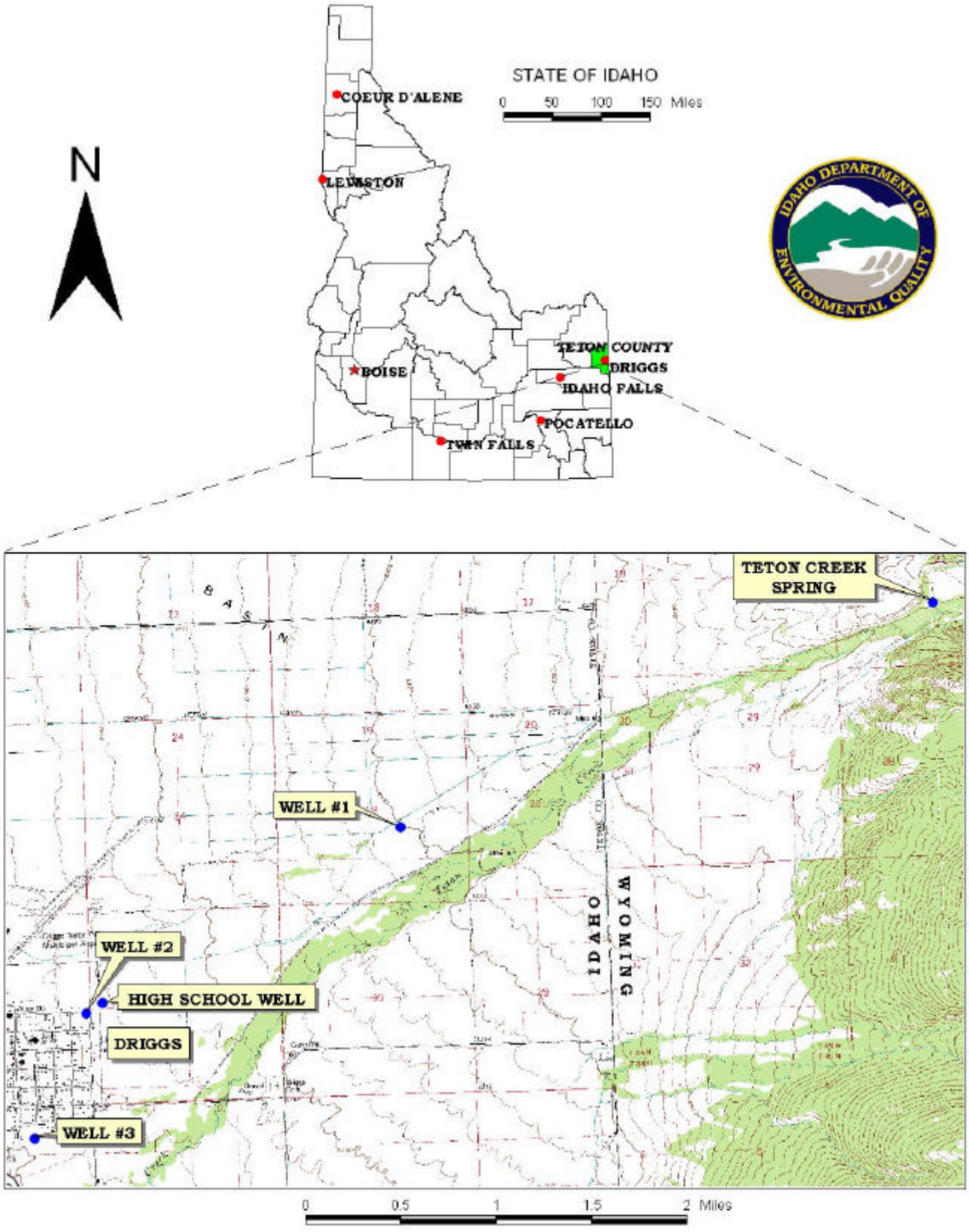
The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. DEQ used a refined computer model approved by the EPA in determining the time-of-travel (TOT) zones for water associated with the Teton Valley aquifer in the vicinity of the City of Driggs. The computer model used site-specific data, assimilated by DEQ from a variety of sources including local area well logs and hydrogeologic reports (Kilburn, 1964; Love and Keefer, 1975; Pampeyan et al., 1967; Schroeder, 1972; Young et al., 1991).

The delineated source water assessment area for Well #1 (Tank) can best be described as a 3- and 6-year TOT zone corridor supplied by a watershed. The 3- and 6-year TOT zones are a corridor 2 miles long and 2 miles wide terminating at the contact of the Cache Creek Fault. Since the 6-year TOT ran into the Cache Creek Fault, the model could not compute the 10-year TOT zone. Consequently, the watershed (approximately 28,000 acres) which drains into the 6-year TOT was delineated using the topographic method developed by the Subsurface Water Subcommittee of the Source Water Assessment Advisory Committee. Topographic maps were used to delineate the location of the watershed divide upgradient of the 6-year TOT zone.

The delineation process for the City of Driggs' Teton Creek Spring used a combination of the topographic method and hydrogeologic mapping. Hydrogeologic maps and reports were used to determine the extent of the geologic formation that serves as the source for the springs. Using this method, it was determined that the spring is fed from a limestone formation which overlies a relatively impermeable formation of dolomitic siltstone. The topographic method was used to delineate the extent of the watershed (approximately 26,000 acres) draining into the intake area of the spring.

The City of Driggs' wells take their water from the semi-confined to confined alluvial aquifer above lower Pleistocene silicic volcanic units and Lower Permian and Middle Pennsylvanian thrusted marine detritus. Ground water in this deep alluvial aquifer is likely recharged from surface water irrigation, direct precipitation, stream canal leakage, and the Cache Creek Fault to the east. The Dalley Well, the High School Well, and the Lion's Park Well each have delineations that stretch to the east-northeast and which are approximately two (2) miles long and from one (1) to two (2) miles wide.

FIGURE 1. Geographic Location of the City of Driggs



The actual data used by DEQ in determining the source-water assessment delineation areas are available upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and the City of Driggs and from available databases.

The dominant land use outside the City of Driggs is irrigated agricultural land. Land use within the immediate area of the Dalley Well, the High School well, and the Lion's Park Well consists of residential property, two major transportation corridors, business and industry, and the airport.

It is important to understand that a release may never occur from a potential source of contamination provided best management practices are used at the facility. Many potential sources of contamination are regulated at the federal level, state level, or both, to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, such as educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A contaminant inventory of the study area was conducted from January to March of 2001. This involved identifying and documenting potential contaminant sources within the City of Driggs Source Water Assessment Areas through the use of computer databases and Geographic Information System maps developed by DEQ. In March 2001, the Driggs Water Department conducted an enhanced potential contaminant inventory with John Bokor of the Idaho Rural Water Association to identify additional potential sources of contamination.

Since the delineations all differ from one another, the potential contaminant sites located within each of the delineated source water areas differ. Descriptions of the sites are found in Tables 1 through 5 and the locations relative to the sources are depicted in Figures 2 through 6 (Appendix 1). The Well #1 Tank (Table 1, Figure 2) delineation includes subdivisions with septic systems and a wastewater treatment plant. The Well #2 Dalley (Table 2, Figure 3) delineation has old wells, septic systems, a dairy, storage tanks for agricultural and petroleum products, and landfills. The Well #3 Lion's Park Well (Table 3, Figure 4) delineation has a leaking underground storage tank (LUST) site, multiple underground storage tank (UST) sites, subdivisions with septic systems, old wells, a salvage yard, and land fills. The Teton Creek Spring (Table 4, Figure 5) delineation has septic holding tanks and a wastewater treatment plant. The High School Well (Table 5, Figure 6) delineation has two old wells and the Driggs landfill.

Additionally, Highway 33 and Ski Hill Road are major transportation corridors that cross the delineations. If an accidental spill occurred on either of these transportation corridors within the delineated areas, IOCs, VOCs, SOCs, or microbial contaminants could be added to the aquifer system.

Section 3. Susceptibility Analyses

The water system's susceptibility to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

The hydrologic sensitivity of a well is dependent upon four factors: the surface soil composition, the material in the vadose zone (between the land surface and the water table), the depth to first ground water, and the presence of a 50-foot thick fine-grained zone above the producing zone of the well. Slowly draining soils such as silt and clay typically are more protective of ground water than coarse-grained soils such as sand and gravel. Similarly, fine-grained sediments in the subsurface and a water depth of more than 300 feet protect the ground water from contamination.

The hydrologic sensitivity is high for Well #1 – Tank (see Table 6). This rating reflects the well drained nature of the soil, a vadose zone composed of gravel and large boulders, the lack of thick fine-grained layers retarding the downward movement of contaminants, and the depth to ground water of less than 300 feet. Well #2 Dalley also rated high for hydrologic sensitivity, though the reason was the need to use predominant local conditions since a well log could not be located.

The Lion's Park Well and the High School Well rate moderate for hydrologic sensitivity. The difference from the other two wells is that well logs show low permeability clay units of greater than 50 feet thickness, helping to retard the downward movement of contaminants.

Spring and Well Construction

The system construction score for the Teton Creek Spring was low, due to the proper construction detailed in the most recent Sanitary Survey (2000). The 1995 Sanitary indicates that the spring was determined to be under the direct influence of Teton Creek surface water.

Well construction directly affects the ability of the well to protect the aquifer from contaminants. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the well. Lower scores imply a system is less vulnerable to contamination. For example, if the well casing and annular seal both extend into a low permeability unit, then the possibility of contamination is reduced and the system construction score goes down. If the highest production interval is more than 100 feet below the water table, then the system is considered to have better buffering capacity. If the wellhead and surface seal are maintained to

standards, as outlined in Sanitary Surveys, then contamination down the well bore is less likely. If the well is protected from surface flooding and is outside the 100-year floodplain, then contamination from surface events is reduced.

The City of Driggs drinking water system consists of four wells that extract ground water for community uses. All four wells rate moderate for system construction. The 2000 Sanitary Survey shows that the wellhead and surface seals are maintained in all four wells. All but the High School Well are protected from surface flooding. Well logs for Well #1 – Tank, the High School Well, and the Lion's Park Well indicate the highest production interval is greater than 100 feet below the water table.

The Idaho Department of Water Resources *Well Construction Standards Rules* (1993) require all Public Water Systems (PWSs) to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works* (1997) during construction. Some of the requirements include casing thicknesses, well tests, and depth and formation type that the surface seal must be installed into. Table 1 of the *Recommended Standards for Water Works* (1997) lists the required steel casing thickness for various diameter wells. Six-inch diameter wells require a casing thickness of at least 0.288-inches, eight-inch diameter wells require a casing thickness of 0.322-inches, ten-inch diameter wells require a casing thickness of 0.365-inches, and twelve-inch diameter wells require a casing thickness of 0.375-inches. Each of the City of Driggs wells received an additional point in the system construction category because of their failure to meet current well construction standards.

Potential Contaminant Source and Land Use

The Well #1 – Tank rated high for IOCs (i.e. arsenic, nitrate) and moderate for VOCs (i.e. petroleum products), SOCs (i.e. pesticides) and microbial contaminants (i.e. bacteria). Irrigated agricultural land and subdivisions with septic tank use in the delineated source area contribute the largest number of points to the contaminant inventory rating. Well #2 – Dalley rated high for IOCs and SOCs and moderate for VOCs and microbial contamination. Agricultural chemical storage, a landfill, septic systems, old wells, and agricultural land uses add to the high scores. The Lion's Park Well rates high for IOCs, VOCs, and SOCs, and moderate for microbial contamination. The Lion's Park Well contains all the potential contaminant sources along Highway 33 in the center of town. The High School Well rates high for IOCs, moderate for VOCs and SOCs, and low for microbial contamination. Agricultual land uses contribute the most points for this well. County level nitrogen fertilizer use is rated as high for all four wells.

Teton Creek spring rated moderate for IOCs, VOCs, SOCs, and microbial contaminants. There are two potential contaminant sources that could add all types of contamination. Additionally, Ski Hill Road passes through the delineation and could be a source of turbidity in the watershed. No agricultural land exists within 500 feet of the spring intake area.

Final Susceptibility Rating

An IOC detection above a drinking water standard MCL, any detection of a VOC or SOC, or a detection of total coliform bacteria or fecal coliform bacteria at the wellhead will automatically give a high susceptibility rating to a well, despite the land use of the area, because a pathway for contamination already exists. Hydrologic sensitivity and system construction scores are heavily weighted in the final scores. Having multiple potential contaminant sources in the 0- to 3-year time-of-travel zone (Zone 1B) and much agricultural land contribute greatly to the overall ranking. In terms of total susceptibility, Well #1 – Tank and Well #2 – Dalley rate high for all categories. The High School well rates high for IOCs and moderate for VOCs, SOCs, and microbial contaminants. The Lion's Park Well rates moderate for all categories. The Teton Creek Spring rates low for all categories.

Table 6. Summary of the City of Driggs' Susceptibility Evaluation

Source	**Susceptibility Scores[1]**									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	**Final Susceptibility Ranking**			
		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Well #1 – Tank	H	H	M	M	M	M	H	H	H	H
Well #2 – Dalley	H	H	M	H	M	M	H	H	H	H
Lion's Park Well	M	H	H	H	M	M	M	M	M	M
High School Well	M	H	M	M	L	M	H	M	M	M
Teton Creek Spring	NA	M	M	M	M	L	L	L	L	L

[1]H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
NA = not applicable for sources under the direct influence of surface water

Susceptibility Summary

In terms of total susceptibility, Well #1 – Tank and Well #2 – Dalley rate high for all categories. The High School well rates high for IOCs and moderate for VOCs, SOCs, and microbial contaminants. The Lion's Park Well rates moderate for all categories. The Teton Creek Spring rates low for all categories. Agricultural land uses, high county-wide nitrogen fertilizer use, and transportation corridors contribute the most land-use points to Well #1 – Tank, Well #2 – Dalley, and the Lion's Park Well. High hydrologic sensitivity also contributes heavily to the overall scores.

In July 1996, total coliform bacteria and *E-coli* bacteria were detected in water samples taken from the "waterline" for the City of Driggs' water supply. From December 1994 to December 2000, nitrate concentrations were below 2.0 mg/l in all the sources. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/l. Inorganic compounds in the form of Chromium and Fuoride have been detected in the High School Well, but at levels well below the MCL. No VOCs or SOCs were detected in any of the sources.

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective source water protection program is tailored to the particular local source water protection area. A community with a fully developed source water protection program will incorporate many strategies. For the City of Driggs, source water protection activities should focus on correcting any deficiencies outlined in the Sanitary Survey. Since total coliform bacteria were detected in the distribution system, the City of Driggs should maintain their disinfection program, which can be used to treat this problem. Any spills from the potential contaminant sources listed in Tables 1 through 5 should be carefully monitored, as should any future development or resource extraction in the Teton Spring Creek watershed. Other practices aimed at reducing the leaching of agricultural chemicals from farmland within the designated source water areas should be implemented. The City of Driggs may want to consider making a well other than Well #1 – Tank-- the primary back-up well. The Lion's Park Well seems to offer the most protection against potential contaminants and may be the best choice for primary back-up status. Most of the designated areas are outside the direct jurisdiction of the City of Driggs and would not be impacted by municipal ordinances, making partnerships with state and local agencies and industry groups critical to success. Since the main source of water comes from a Wyoming watershed, the City of Driggs should consider adding representatives from Wyoming to any groups formed. Due to the time involved with the movement of ground water, wellhead protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. Source water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil and Water Conservation District, and the Natural Resources Conservation Service.

Since the aquifer appears to have alternating layers of sands and gravels with traces of clay, deeper wells seem offer better protection from total coliform bacteria and inorganic contaminants. Any new PWS well should meet the *Recommended Standards for Water Works* (1997) as outlined in IDAPA 37.03.09 and IDAPA 58.01.08.550.

Assistance

Public water suppliers and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Idaho Falls Regional DEQ Office	(208) 528-2650
State DEQ Office	(208) 373-0502

Website: http://www2.state.id.us/deq

Water suppliers serving fewer than 10,000 persons may contact John Bokor, Idaho Rural Water Association, at 1-800-962-3257 for assistance with wellhead protection strategies.

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund≅ is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

References Cited

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Love, J.D. and Keefer, W.R., *Geology of Sedimentary Rocks in Southern Yellowstone National Park, Wyoming*, USGS Professional Paper 729-D, 1975.

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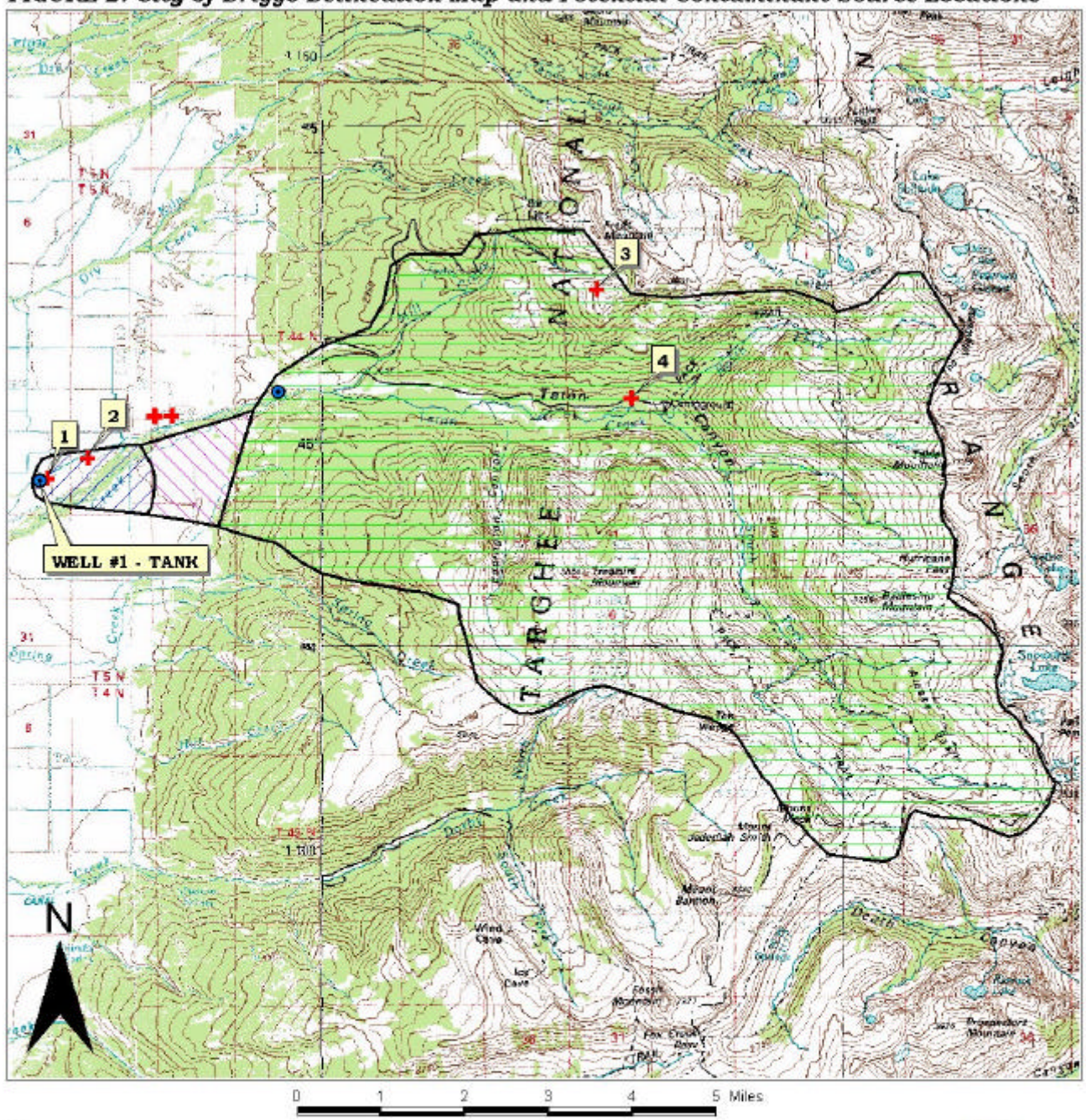
Schroeder, M.L., *Geologic Map of the Rendevous Peak Quadrangle, Teton County, Wyoming*, USGS Geologic Quadrangle Map GQ-980, 1972.

Young, H. W., Parliman, D. J., Jones, M. L., Stone, M. A. J., *Hydrologic and water-quality data for selected sites, Grand Teton National Park, Wyoming, September 1988 through September 1990*, USGS Open File Report 91-0056, 1991.

Appendix 1
Delineation Figures and
Potential Contaminant Tables

FIGURE 2. City of Driggs Delineation Map and Potential Contaminant Source Locations



LEGEND

Time of Travel Zones
- 1 (3 yr TOT)
- 2 (6 yr TOT)
- 3 (10 yr TOT)
- Wellhead
- Enhanced Inventory
- CERCLIS Site
- RCRIS Site
- Dairy
- LUST Site
- Closed UST Site
- Open UST Site
- Business Mailing List
- NPDES Site
- Mine
- AST
- Toxic Release Inventory
- SARA Title III Site (EPCRA)
- Recharge Point
- Injection Well
- Group1 Site
- Cyanide Site
- Landfill
- Wastewater Land App.Site

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY

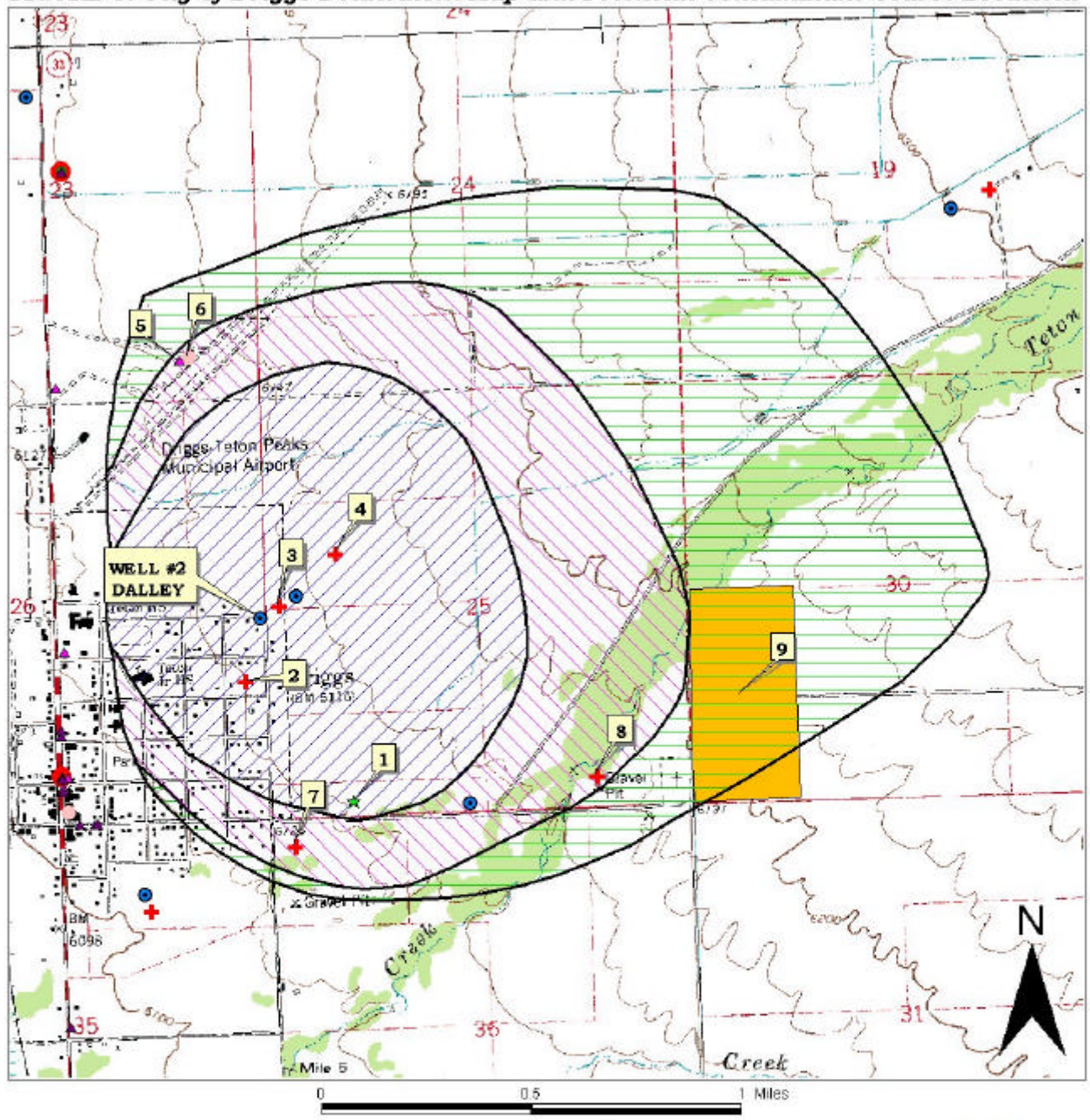
PWS# 7410004
WELL #1 - TANK

Table 1. City of Driggs, Well #1 – Tank, Potential Contaminant Inventory

Site #	Source Description	TOT Zone[1] (years)	Source of Information	Potential Contaminants[2]
	Ski Hill Road	0-10	GIS Map	IOC, VOC, SOC, Microbes
1	Subdivision with septic tanks	0-3	Enhanced Inventory	IOC, VOC, SOC, Microbes
2	Subdivision with septic tanks and wells	0-3	Enhanced Inventory	IOC, VOC, SOC, Microbes
3	Wastewater Treatment Plant	6-10	Enhanced Inventory	IOC, VOC, SOC, Microbes
4	Septic holding tanks	6-10	Enhanced Inventory	IOC, VOC, SOC, Microbes

[1] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[2] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

FIGURE 3. City of Driggs Delineation Map and Potential Contaminant Source Locations



LEGEND

Time of Travel Zones
1 (3 yr TOT)
2 (6 yr TOT)
3 (10 yr TOT)
Wellhead
Enhanced Inventory
CERCLIS Site
RCRIS Site
Dairy
LUST Site
Closed UST Site
Open UST Site
Business Mailing List
NPDES Site
Mine
AST
Toxic Release Inventory
SARA Title III Site (EPCRA)
Recharge Point
Injection Well
Group1 Site
Cyanide Site
Landfill
Wastewater Land App.Site

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY

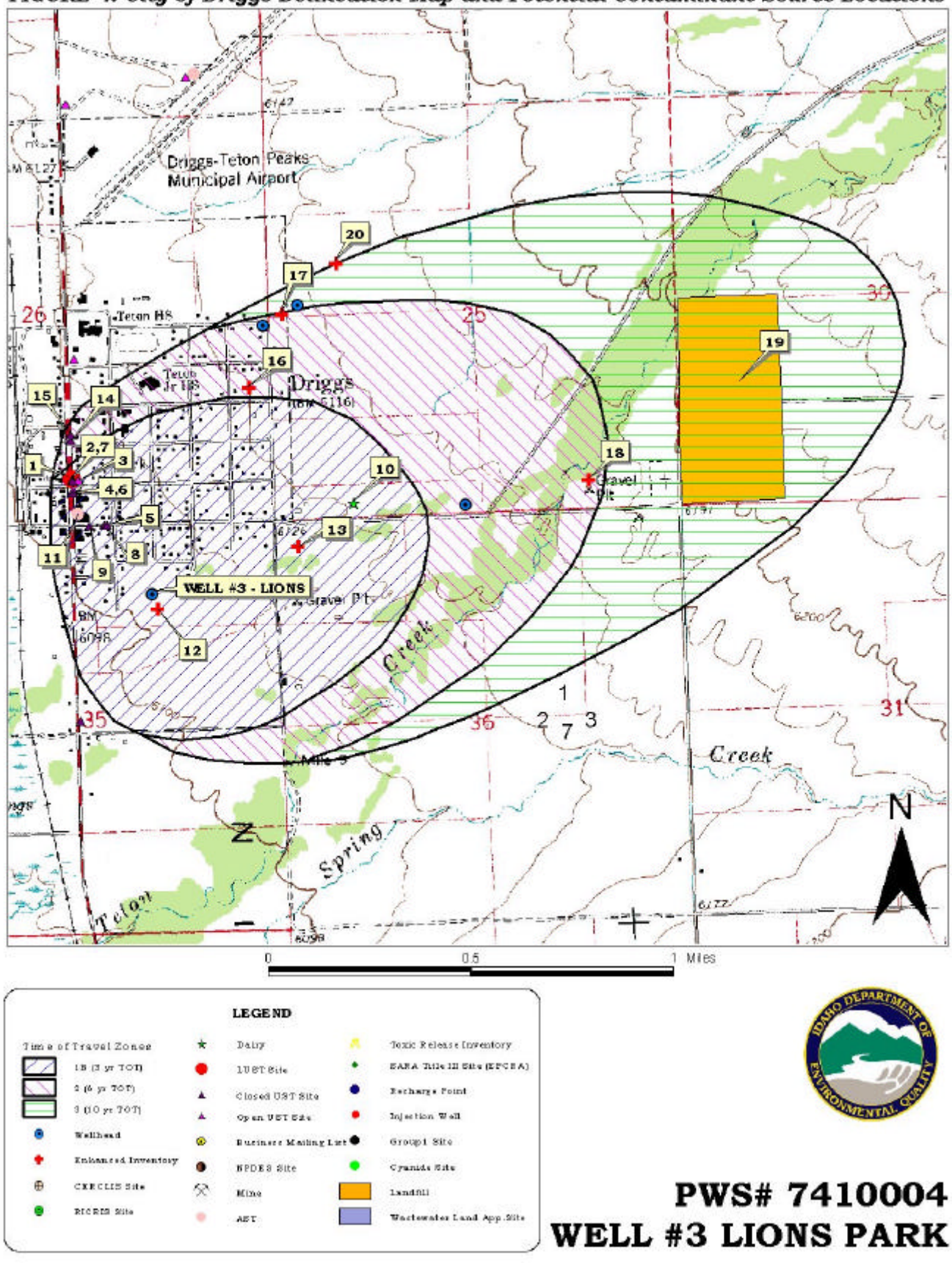
PWS# 7410004
WELL #2 DALLEY

Table 2. City of Driggs, Well #2 – Dalley, Potential Contaminant Inventory

Site #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
	Ski Hill Road	3-10	GIS Map	IOC, VOC, SOC, Microbes
1	Dairy <= 200 cows	0-3	Database Search	IOC, SOC, Microbes
2	Septic System	0-3	Enhanced Inventory	IOC, VOC, SOC, Microbes
3	Dry Well	0-3	Enhanced Inventory	IOC, VOC, SOC, Microbes
4	Abandoned well (irrigation?)	0-3	Enhanced Inventory	IOC, VOC, SOC, Microbes
5	UST	3-6	Database Search	VOC, SOC
6	AST	3-6	Database Search	IOC, SOC
7	Abandoned landfill	3-6	Enhanced Inventory	IOC, VOC, SOC, Microbes
8	Subdivision with septic tanks and wells	3-6	Enhanced Inventory	IOC, VOC, SOC, Microbes
9	Driggs Landfill	6-10	Enhanced Inventory	IOC, VOC, SOC, Microbes

[1] UST = underground storage tank, AST = above ground storage tank
[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

FIGURE 4. City of Driggs Delineation Map and Potential Contaminant Source Locations



LEGEND

Time of Travel Zones
- 1 (3 yr TOT)
- 2 (6 yr TOT)
- 3 (10 yr TOT)
- Wellhead
- Enhanced Inventory
- CERCLIS Site
- RCRIS Site
- Dairy
- LUST Site
- Closed UST Site
- Open UST Site
- Business Mailing List
- NPDES Site
- Mine
- AST
- Toxic Release Inventory
- SARA Title III Site (EPCRA)
- Recharge Point
- Injection Well
- Group1 Site
- Cyanide Site
- Landfill
- Wastewater Land App.Site

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY

PWS# 7410004
WELL #3 LIONS PARK

Table 3. City of Driggs, Well #2 – Lions Park, Potential Contaminant Inventory

Site #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
	Highway 33	0-3	GIS Map	IOC, VOC, SOC, Microbes
	Ski Hill Road	3-10	GIS Map	IOC, VOC, SOC, Microbes
1	LUST	0-3	Database Search	VOC, SOC
2	UST	0-3	Database Search	VOC, SOC
3	UST	0-3	Database Search	VOC, SOC
4	UST	0-3	Database Search	VOC, SOC
5	UST	0-3	Database Search	VOC, SOC
6	UST	0-3	Database Search	VOC, SOC
7	UST	0-3	Database Search	VOC, SOC
8	UST	0-3	Database Search	IOC, VOC, SOC
9	UST	0-3	Database Search	VOC, SOC
10	Dairy <= 200 cows	0-3	Database Search	IOC, SOC, Microbes
11	AST	0-3	Database Search	VOC, SOC
12	Salvage yard	0-3	Enhanced Inventory	IOC, VOC, SOC
13	Abandoned landfill	0-3	Enhanced Inventory	IOC, VOC, SOC, Microbes
14	UST	3-6	Database Search	VOC, SOC
15	UST	3-6	Database Search	VOC, SOC
16	Septic System	3-6	Enhanced Inventory	IOC, VOC, SOC, Microbes
17	Dry Well	3-6	Enhanced Inventory	IOC, VOC, SOC, Microbes
18	Subdivision with septic tanks and wells	3-6	Enhanced Inventory	IOC, VOC, SOC, Microbes
19	Driggs Landfill	6-10	Enhanced Inventory	IOC, VOC, SOC, Microbes
20	Abandoned well (irrigation?)	6-10	Enhanced Inventory	IOC, VOC, SOC, Microbes

[1] LUST = leaking underground storage tank, UST = underground storage tank, AST = above ground storage tank
[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

FIGURE 5. City of Driggs Delineation Map and Potential Contaminant Source Locations

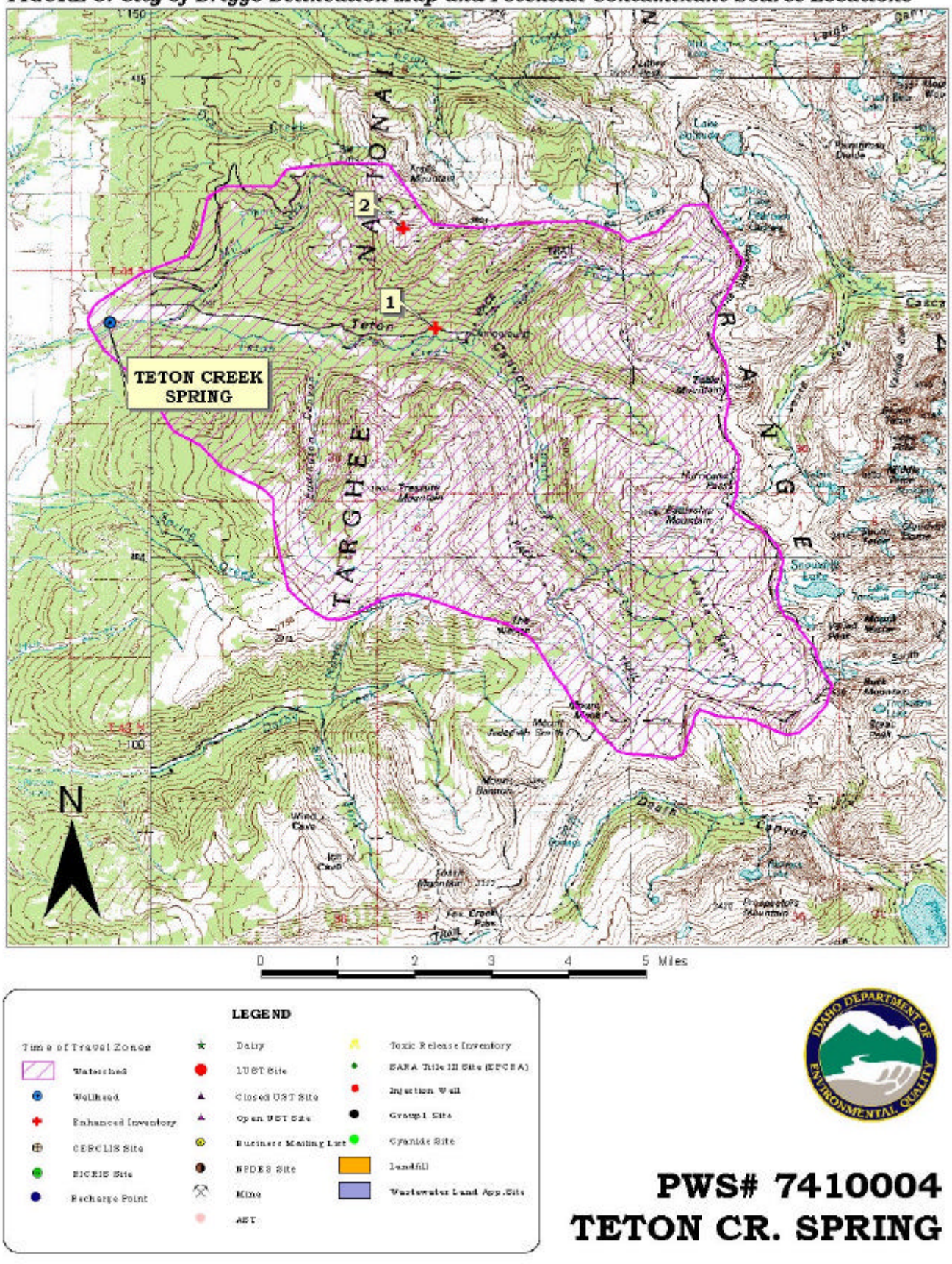
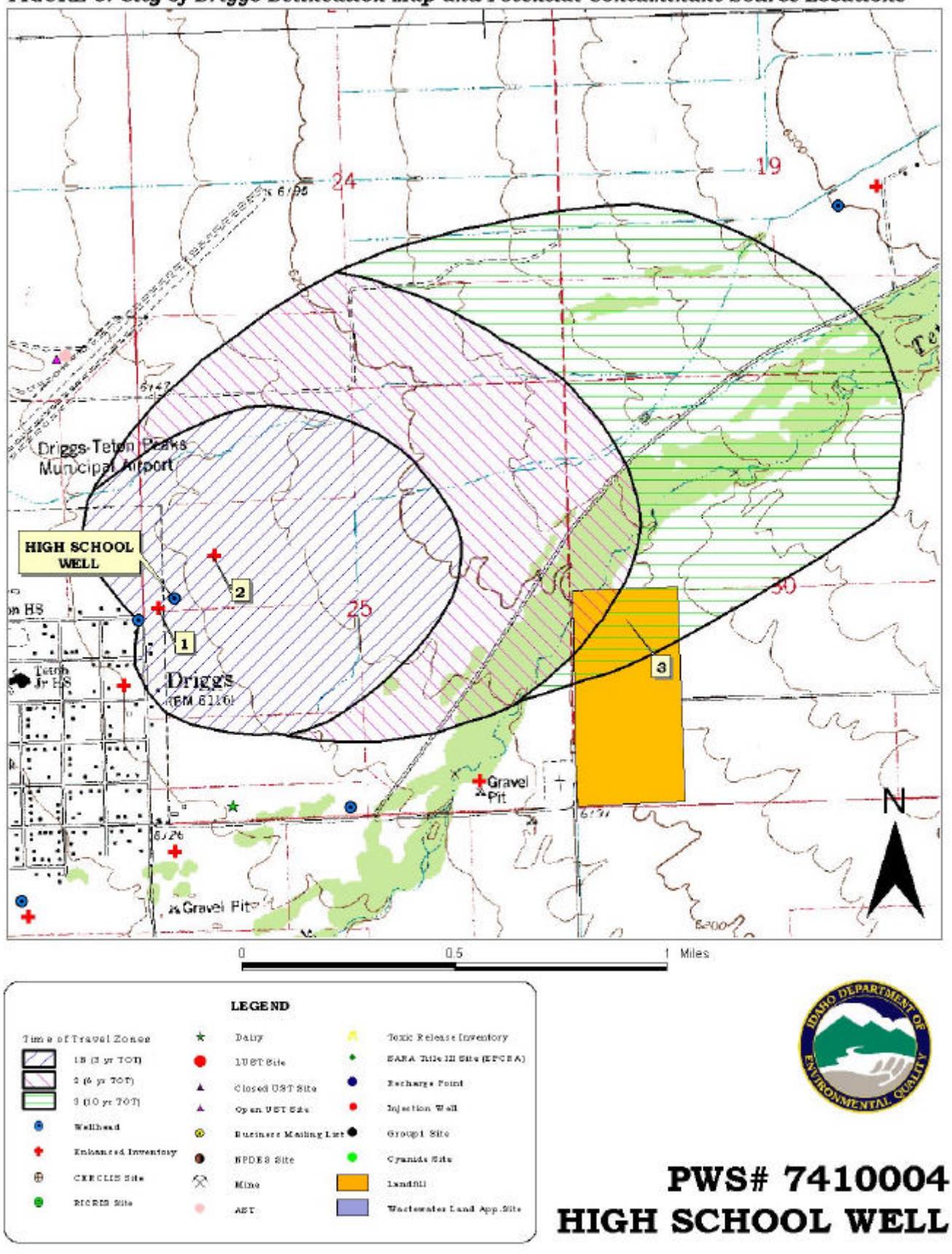


Table 4. City of Driggs, Teton Creek Spring, Potential Contaminant Inventory

Site #	Source Description	TOT Zone[1] (years)	Source of Information	Potential Contaminants[2]
	Ski Hill Road	0-10	GIS Map	IOC, VOC, SOC, Microbes
1	Septic holding tanks	0-3	Enhanced Inventory	IOC, VOC, SOC, Microbes
2	Wastewater Treatment Plant	0-3	Enhanced Inventory	IOC, VOC, SOC, Microbes

[1] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[2] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

FIGURE 6. City of Driggs Delineation Map and Potential Contaminant Source Locations



PWS# 7410004
HIGH SCHOOL WELL

Table 5. City of Driggs, High School Well, Potential Contaminant Inventory

Site #	Source Description	TOT Zone[1] (years)	Source of Information	Potential Contaminants[2]
	Ski Hill Road	6-10	GIS Map	IOC, VOC, SOC, Microbes
1	Dry Well	0-3	Enhanced Inventory	IOC, VOC, SOC, Microbes
2	Abandoned Well (irrigation?)	0-3	Enhanced Inventory	IOC, VOC, SOC, Microbes
3	Driggs Landfill	3-10	Database Search	IOC, VOC, SOC, Microbes

[1] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[2] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Attachment A
City of Driggs
Susceptibility Analysis
Worksheet

The final scores for the susceptibility analysis the wells were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring for the four wells:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Final Susceptibility Scoring for the infiltration gallery (Teton Creek Spring):

0 – 7 Low Susceptibility

8 – 15 Moderate Susceptibility

≥ 15 High Susceptibility

Ground Water Susceptibility Report Public Water System Name : DRIGGS CITY OF Well# : WELL #1, TANK

Public Water System Number 7410004 05/07/2001 8:16:51 AM

1. System Construction		SCORE				
Drill Date		07/31/1987				
Driller Log Available		YES				
Sanitary Survey (if yes, indicate date of last survey)		YES	2000			
Well meets IDWR construction standards		NO	1			
Wellhead and surface seal maintained		YES	0			
Casing and annular seal extend to low permeability unit		NO	2			
Highest production 100 feet below static water level		YES	0			
Well located outside the 100 year flood plain		YES	0			
	Total System Construction Score		3			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained		NO	2			
Vadose zone composed of gravel, fractured rock or unknown		YES	1			
Depth to first water > 300 feet		NO	1			
Aquitard present with > 50 feet cumulative thickness		NO	2			
	Total Hydrologic Score		6			
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	DRYLAND AGRICULTURE		1	1	1	1
Farm chemical use high		YES	2	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A		NO	NO	NO	NO	NO
	Total Potential Contaminant Source/Land Use Score - Zone 1A		3	1	1	1
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)		YES	3	3	3	3
(Score = # Sources X 2) 8 Points Maximum			6	6	6	6
Sources of Class II or III leacheable contaminants or		YES	4	1	1	
4 Points Maximum			4	1	1	
Zone 1B contains or intercepts a Group 1 Area		NO	0	0	0	0
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land		4	4	4	4
	Total Potential Contaminant Source / Land Use Score - Zone 1B		14	11	11	10
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present		YES	2	2	2	
Sources of Class II or III leacheable contaminants or		YES	1	1	1	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land		2	2	2	
	Potential Contaminant Source / Land Use Score - Zone II		5	5	5	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present		YES	1	1	1	
Sources of Class II or III leacheable contaminants or		YES	1	1	1	
Is there irrigated agricultural lands that occupy > 50% of		NO	0	0	0	
	Total Potential Contaminant Source / Land Use Score - Zone III		2	2	2	0
Cumulative Potential Contaminant / Land Use Score			24	19	19	11
4. Final Susceptibility Source Score			14	13	13	13
5. Final Well Ranking			High	High	High	High

Ground Water Susceptibility Report Public Water System Name : DRIGGS CITY OF Well# : WELL #2, DALLEY

Public Water System Number 7410004 05/07/2001 8:17:46 AM

1. System Construction		SCORE				
Drill Date						
Driller Log Available		NO				
Sanitary Survey (if yes, indicate date of last survey)		YES	2000			
Well meets IDWR construction standards		NO	1			
Wellhead and surface seal maintained		YES	0			
Casing and annular seal extend to low permeability unit		NO	2			
Highest production 100 feet below static water level		NO	1			
Well located outside the 100 year flood plain		YES	0			
Total System Construction Score			4			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained		NO	2			
Vadose zone composed of gravel, fractured rock or unknown		YES	1			
Depth to first water > 300 feet		NO	1			
Aquitard present with > 50 feet cumulative thickness		NO	2			
Total Hydrologic Score			6			
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED PASTURE		1	1	1	1
Farm chemical use high		YES	2	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A		NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A			3	1	1	1
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)		YES	4	3	4	4
(Score = # Sources X 2) 8 Points Maximum			8	6	8	8
Sources of Class II or III leacheable contaminants or		YES	4	1	1	
4 Points Maximum			4	1	1	
Zone 1B contains or intercepts a Group 1 Area		NO	0	0	0	0
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land		4	4	4	4
Total Potential Contaminant Source / Land Use Score - Zone 1B			16	11	13	12
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present		YES	2	2	2	
Sources of Class II or III leacheable contaminants or		YES	1	1	1	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land		2	2	2	
Potential Contaminant Source / Land Use Score - Zone II			5	5	5	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present		YES	1	1	1	
Sources of Class II or III leacheable contaminants or		YES	1	1	1	
Is there irrigated agricultural lands that occupy > 50% of		YES	1	1	1	
Total Potential Contaminant Source / Land Use Score - Zone III			3	3	3	0
Cumulative Potential Contaminant / Land Use Score			27	20	22	13
4. Final Susceptibility Source Score			15	14	14	15
5. Final Well Ranking			High	High	High	High

Ground Water Susceptibility Report Public Water System Name : DRIGGS CITY OF Well# : WELL #3, LIONS

Public Water System Number 7410004 05/07/2001 8:16:16 AM

1. System Construction		SCORE				
Drill Date	12/30/1992					
Driller Log Available	YES					
Sanitary Survey (if yes, indicate date of last survey)	YES	2000				
Well meets IDWR construction standards	NO	1				
Wellhead and surface seal maintained	YES	0				
Casing and annular seal extend to low permeability unit	NO	2				
Highest production 100 feet below static water level	YES	0				
Well located outside the 100 year flood plain	YES	0				
Total System Construction Score		3				
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	NO	2				
Vadose zone composed of gravel, fractured rock or unknown	YES	1				
Depth to first water > 300 feet	NO	1				
Aquitard present with > 50 feet cumulative thickness	YES	0				
Total Hydrologic Score		4				
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED PASTURE		1	1	1	1
Farm chemical use high	YES		2	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO		NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A			3	1	1	1
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES		6	15	15	4
(Score = # Sources X 2) 8 Points Maximum			8	8	8	8
Sources of Class II or III leacheable contaminants or	YES		6	10	4	
4 Points Maximum			4	4	4	
Zone 1B contains or intercepts a Group 1 Area	NO		0	0	0	0
Land use Zone 1B	25 to 50% Irrigated Agricultural Land		2	2	2	2
Total Potential Contaminant Source / Land Use Score - Zone 1B			14	14	14	10
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	YES		2	2	2	
Sources of Class II or III leacheable contaminants or	YES		1	1	1	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land		2	2	2	
Potential Contaminant Source / Land Use Score - Zone II			5	5	5	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	YES		1	1	1	
Sources of Class II or III leacheable contaminants or	YES		1	1	1	
Is there irrigated agricultural lands that occupy > 50% of	YES		1	1	1	
Total Potential Contaminant Source / Land Use Score - Zone III			3	3	3	0
Cumulative Potential Contaminant / Land Use Score			25	23	23	11
4. Final Susceptibility Source Score			12	12	12	11
5. Final Well Ranking			Moderate	Moderate	Moderate	Moderate

Ground Water Susceptibility Report Public Water System Name : DRIGGS CITY OF Well# : HIGH SCHOOL WEL

Public Water System Number 7410004 05/04/2001 7:56:54 AM

1. System Construction		SCORE				
Drill Date		11/20/1997				
Driller Log Available		YES				
Sanitary Survey (if yes, indicate date of last survey)		YES	2000			
Well meets IDWR construction standards		NO	1			
Wellhead and surface seal maintained		YES	0			
Casing and annular seal extend to low permeability unit		NO	2			
Highest production 100 feet below static water level		YES	0			
Well located outside the 100 year flood plain		NO	1			
	Total System Construction Score		4			
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained		NO	2			
Vadose zone composed of gravel, fractured rock or unknown		YES	1			
Depth to first water > 300 feet		NO	1			
Aquitard present with > 50 feet cumulative thickness		YES	0			
	Total Hydrologic Score		4			
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED PASTURE		1	1	1	1
Farm chemical use high		YES	2	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A		NO	NO	NO	NO	NO
	Total Potential Contaminant Source/Land Use Score - Zone 1A		3	1	1	1
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)		YES	2	2	2	2
(Score = # Sources X 2) 8 Points Maximum			4	4	4	4
Sources of Class II or III leacheable contaminants or		YES	4	0	0	
4 Points Maximum			4	0	0	
Zone 1B contains or intercepts a Group 1 Area		NO	0	0	0	0
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land		4	4	4	4
	Total Potential Contaminant Source / Land Use Score - Zone 1B		12	8	8	8
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present		YES	2	2	2	
Sources of Class II or III leacheable contaminants or		YES	1	1	1	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land		2	2	2	
	Potential Contaminant Source / Land Use Score - Zone II		5	5	5	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present		YES	1	1	1	
Sources of Class II or III leacheable contaminants or		YES	1	1	1	
Is there irrigated agricultural lands that occupy > 50% of		YES	1	1	1	
	Total Potential Contaminant Source / Land Use Score - Zone III		3	3	3	0
Cumulative Potential Contaminant / Land Use Score			23	17	17	9
4. Final Susceptibility Source Score			13	11	11	11
5. Final Well Ranking			High	Moderate	Moderate	Moderate

Surface Water Susceptibility Report Public Water System Name : DRIGGS CITY OF Well# : TETON CR SPRING

Public Water System Number 7410004 05/07/2001 8:17:26 AM

1. System Construction		SCORE
Intake structure properly constructred	YES	0
Infiltration gallery or well under the direct influence of Surface Water	YES	0
	Total System Construction Score	0

2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
Significant contaminant sources *	NO				
Sources of class II or III contaminants or microbials	present within the small stream segment of	3	3	3	3
Agricultural lands within 500 feet	YES Less than 25% Irrigated Agriculture	0	0	0	0
Three or more contaminant sources	NO	0	0	0	0
Sources of turbidity in the watershed	YES	1	1	1	1
	Total Potential Contaminant Source / Land Use Score	7	7	7	7
3. Final Susceptibility Source Score		7	7	7	7
4. Final Source Ranking		Low	Low	Low	Low

* Special consideration due to significant contaminant sources
The source water has no special susceptibility concerns